

## ASSESSMENT OF GENETIC DIVERSITY AMONG DIFFERENT GENOTYPES OF *TERMINALIA ARJUNA* AND *T. TOMENTOSA*

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### ABSTRACT

Genus *Terminalia* L. belongs to family combretaceae and consists of trees, shrubs and woody climbers. The genus is of immense economic importance in various industries viz., pharmaceutical, timber, paper, soap, match, food, fodder and fuel. Besides, the importance of *Terminalia arjuna* and *T. tomentosahas* been well recognized in tropical tasar silk industry as the two most important primary food plants. A total of thirty – four accessions of *Terminalia arjuna* (18) and *T. tomentosa* (16) of diverse origin were selected for studying genetic diversity. In *T. arjuna*, out of 50 decamer random primers, only 35 primers have given reproducible polymorphic products. In all, 641 amplified bands were obtained of which 589 bands were polymorphic and 52 were monomorphic. In *T. tomentosa*, out of 50 primers, only 37 primers have given reproducible polymorphic products. Thirty – seven random primers generated a total of 719 bands; in which 693 were polymorphic (96.38%) and 26 were monomorphic. On an average, 18.73 polymorphic bands were generated per primer ranging between 11 and 35 bands. Dendrogram based on RAPD data grouped both *T. arjuna* (18 accessions) and *T. tomentosa* (16 accessions) in three major clusters. High level of heterozygosity was noticed in both the species. The Shanon's index was also very high (0.562-0.578) indicating the extent of genetic diversity available for these two species. The percentage of polymorphism generated by decamer primers indicates that RAPD is the most suitable marker to assess genetic diversity in *Terminalia*. The present study is the first report on molecular analysis of different accessions of divergent origin of *T. arjuna* and *T. tomentosa* which can be used in hybridization programme to evolve superior genotypes of this important multipurpose tree.

**Key words:** Genetic diversity, RAPD, *Terminalia arjuna*, *Terminalia tomentosa*.